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REVIEW OF THE PROGRESS OF THE MATERIA MEDICA.

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[Communicated for the Boston Medical and Surgical Journal.]

*To the President and Fellows of the Maine Medical Association.*

THE subject of *Materia Medica* was committed to the writer for review, a vote taken by the Association requiring the addition of two other gentlemen, members of the Association, as coadjutors. In compliance with this vote, about the last of March and first of April, the writer addressed a letter to J. McKeen, Jr., M.D., of Topsham, and Charles A. Packard, M.D., of Waldoboro', inviting their co-operation. Whether the letters were misdirected, or whether the time was ill chosen, suggesting the thought of a first-of-April *canard*, the writer cannot say; but after waiting six weeks or more, and hearing nothing from either of the above-named gentlemen, it was deemed useless to waste further time in seeking other collaborators, and the business in hand was taken up and carried on—how acceptably to the Association, let the sequel show.

In reviewing the progress of *materia medica* during the decade which has just gone by, it is worthy of remark that the positive additions to the primary list in our own Pharmacopœia, have been few and far between. We may consider the officinal list as already pretty thoroughly completed, and any new candidate for admission must have superior claims to obtain for it officinal recognition. Viewing the general subject of *materia medica* under this aspect, we arrive at the conclusion that its progress consists essentially in improvements in the forms under which standard remedies are administered, in the pharmaceutical treatment of drugs and simples, and of a better comprehension of the principles and conditions which obtain in the various processes conducted under the hand and eye of the scientific pharmacist. This may not be assented to by all, but the pharmaceutical stand-point would seem to favor this view of the subject; and being the one

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which the writer, from the nature of his business, is compelled to take, it may not be altogether devoid of interest, instruction and novelty to those who are accustomed to view the subject more exclusively in its therapeutical relations.

But the ten years past have not been altogether barren of new remedies, some of which have already become officinal, and it is to those, and those especially with which the writer has dealt practically, more or less, that your attention is now invited.

Cod-liver oil may be said to have had its day, for it is comparatively little used now, though twelve years ago it was as prominently before the profession as are the hypophosphites at the present day. It is alluded to here, as a reliable source of propylamine, in case the herring pickle should fail, as a source whence to obtain that alkaloid. As the result of an experiment in that direction, the writer took four pints of cod-liver oil, and distilled it with potash and quick lime, obtaining, as the result of the operation, thirty-two ounces of distillate containing a large proportion of pure propylamine. A quantitative experiment gave, as an approximative result, ten grains of sulphate of propylamine to the ounce, equal to five grains of pure anhydrous propylamine, which possesses all the properties of that obtained from the brine of herrings or the ergot of rye. This was the result of an examination made upon a specimen preserved in a cork-stopped bottle, which had been distilled more than a year ago. It is fair to presume that a portion of the alkaloid must have been lost by evaporation, as the bottle had been frequently opened and the cork was not very tight, so that the yield of the crystallized salt from a freshly distilled specimen might be expected to be considerably larger. If propylamine possesses the efficacy ascribed to it in rheumatic affections, the reputation possessed by cod-liver oil in similar affections must be due in great part to that element, which occupies in cod-liver oil the place that glycerine does in many other oils. The most eligible form in which to use it is undoubtedly the chloride, as it is thus rendered fixed, is soluble in water, and its disagreeable odor is thus avoided. Of its taste, the writer cannot speak from experience, as its odor has proved abundantly sufficient for him. A sample of the aqueous solution of propylamine, and also of the sulphate of propylamine, is offered for inspection, both prepared by the writer.

From propylamine, the representative of one class of oils, to glycerine, the representative of another class, the transition is easy, and practically agreeable. Like propylamine, though much longer known, it was at first only a chemical curiosity, to be found solely in extensive chemical cabinets. Some twelve or fourteen years ago, an English aurist employed it in cases of deafness, to soften and otherwise modify the secretions, and to change in some way the action of the secretory glands of the meatus. It was also found to be an excellent ingredient in ointments, and its uses

gradually extended, until some six years ago it came to be recommended as a substitute for cod-liver oil, the nauseous qualities of which rendered it impossible to reconcile sensitive stomachs to its use. But the process for obtaining it was laborious and costly, and the yield very small. The first pound that the writer ever purchased he paid four dollars for, but it was a pure article of high specific gravity, and better than he was able to obtain for several years after. And for years glycerine was offered in the market at a comparatively low price, but contaminated with fetid animal oils, which proved a bar to its use. At length Mr. R. B. Tilghman, of Philadelphia, discovered that the exposure of fat and water to a temperature above 500°, resolved them into hydrated acids and glycerine, and devised an apparatus to effect that division, which it is unnecessary to describe here, and which, once fairly brought into action, soon affected the price of glycerine, reducing it some 75 per cent. Since its price has been reduced so as to bring it within the reach of pharmacutists, we have had much discussion upon its utility, and the range of applications of which it is capable. A few of these will here be noticed.

First, As a substitute for cod-liver oil, for internal use, it has been tested by some of the leading physicians of Portland, who are so favorably impressed by its merits, that their verdict is, that but for its expense, it would be prescribed, to the entire exclusion of cod-liver oil.

Second, As an ingredient in ointments and for an emollient application in poultices, nothing has been found to compare with it. A beautiful ointment, which will well replace the ung. aquæ rosæ, may be made by the following formula:—Take of almond oil expressed, two fluid ounces; spermaceti, six drachms; glycerine, four fluid drachms; otto of roses, otto of bergamot, each two drops. Melt the spermaceti by the aid of a water bath, add the almond oil so gradually as not to recondense any of the spermaceti, remove from the bath, and stir until the mixture concretes on cooling, when the glycerine is to be added and thoroughly incorporated. The ottos are finally to be incorporated, when the ointment is finished. Another very nice emollient application, which may be termed glycerine lotion, may be made as follows:—Take of mucilage of quince seeds, glycerine, each one fluid ounce; orange-flower water, six fluid ounces; mix; make a lotion. The ointment above described has, in the writer's experience, kept perfectly sweet and free from rancidity even under very unfavorable circumstances.

Glycerine lotions have been recommended by Soubeiran, of Paris, as follows:—*Lotion of Morphia*—Take of acetate of morphia, three grains; glycerine, five drachms *troy*; dissolve. *Lotion of Strychnia*—Take of sulphate of strychnia, six grains; glycerine, five drachms *troy*; dissolve the salt in the glycerine, in a porcelain mortar. *Lotion of Veratria*—Take of veratria, fifteen grains; diluted muriatic acid, sufficient; glycerine, five drachms; dissolve

and mix. *Lotion of Atropia*—Take of atropia, six grains; diluted muriatic acid, sufficient; glycerine, two and a half drachms; dissolve and mix. The reason why diluted muriatic acid is ordered in the last two formulæ, may be found in the fact, that the *salts* of the alkaloid, not the alkaloids themselves, are soluble in glycerine. These lotions are to be applied by friction, according to the various indications, which practitioners will recognize without more particular allusion.

Charles Tilyard, of Baltimore, proposes the following as a substitute for Goulard's cerate, which so speedily grows rancid, and becomes more irritating than soothing to inflamed surfaces. Take of pure glycerine, thirteen and a half fluid ounces; solution of subacetate of lead, two and a half fluid ounces; gum camphor, half a drachm. Triturate the camphor with a few drops of alcohol, add the glycerine, heat in a water bath until the camphor is dissolved; when cool, add the solution of lead, and shake well together. This does not change, is easily washed off with water, and can be reduced to any desired extent either with rose or distilled water. The proportions cited above are for those of Goulard's cerate, substituting the oil and wax by glycerine.

In the third place, glycerine finds an extensive range of application as a solvent for various medicinal substances. Sulphur is soluble in a small proportion, and the alkaline sulphuret very much so. The salts of the alkaloids are freely soluble, while the alkaloids require adjuvants to render them equally so. Tannin is soluble one part in six, and the glycerine employed in the experiments from which these results were obtained, contained about twelve per cent. of water, and was not anhydrous, like much that has been recently furnished in the market. The writer observing a report of the solubility of kino in glycerine, determined to put this to the test. So introducing into an ounce phial two drachms of kino, and filling up with glycerine, the bottle was set in a warm situation for two or three days. At the end of that time, the glycerine had taken up a large proportion of the kino, but the mixture was allowed to stand two or three months longer, when it was strained through linen with pretty strong expression, and the residue weighed. The residue was treated with a half ounce more of glycerine, and again strained. The result was that each ounce fluid of the solution represented eighty grains of kino. This solution is miscible in all proportions with water and alcohol. It is easy at once to see that this must bring into play a very valuable astringent.

The solvent power of glycerine makes it a very valuable excipient in pill masses, as it communicates plasticity to the mass, without, if properly used, increasing the bulk of the pill. More experience is required to enable the writer to speak definitely upon this point, but, as a general rule, from the eighth of a drop up to half a drop to a pill, will be found sufficient. The proportions will



vary according to the materials and their bulk, and the glycerine, if cautiously added, will impart plasticity, without converting the mass into a muddy magma; but the exercise of some discretion is necessary. Its stability at ordinary temperatures confers another advantage, namely, that of keeping pills soft, and readily soluble in the secretions of the stomach; instead of, like syrup and gum, permitting them to dry up as hard as shot.

A word upon the various kinds of glycerine in the market. Some are quoted at a low price, and have no makers' names on the labels. They may be good, but unless they are entirely destitute of offensive odor, and are of a high specific gravity, it is best to be shy of them. In good specimens of glycerine, if there is any odor at all, it is inappreciable by olfactories of ordinary sensitiveness; but bad glycerine is worse than none—if not positively poisonous, it is abominably offensive. Price's glycerine has had the top of the market for a long time, but in Philadelphia there are makers who produce an article in no wise inferior. Messrs. Powers & Weightman put theirs up in packages of seven pounds each, and a young man by the name of Bowers manufactures an article and puts it up in the same style as Price, which will compare most favorably with the English article. It is hardly necessary to mention the Western makers, as their productions rarely if ever find their way into this market.

The hypophosphites now invite our attention. These salts were proposed by Dr. J. F. Churchill, in a Report made to the French Academy of Medicine in July, 1857, as a cure for phthisis, on the ground that they were the most eligible vehicles to supply a deficiency of phosphorus in the circulation and nervous system. We shall only discuss some few of the forms in which they have been offered to the profession for use. These are the neutral salts, crystallized or amorphous, most commonly the latter; simple solutions, saccharine or otherwise; and solutions of a more composite character, containing several bases. Of the comparative merits of these different preparations, therapeutically, the writer cannot undertake to speak; but reasoning *a priori*, the solution would seem to be the most eligible form, whether aqueous or saccharine, simple or composite.

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The writer, in the few gallons of hypophosphite syrup manufactured by him, has followed the formula of Prof. Procter, of Philadelphia, as modified by Mr. Wm. S. Thompson, of Baltimore. The formula is as follows:—Take of

Hypophosphite of lime,	256 grains
Hypophosphite of soda,	192 "
Hypophosphite of potassa,	128 "
Protosulphate of iron (crystallized),	185 "
Carbonate of soda,	240 "
Hypophosphorous acid (sp. gr. 1.036),	3½ fluid oz.
Sugar,	12 oz.

Dissolve the protosulphate of iron and the carbonate of soda each separately in four fluid ounces of hot water, and mix the solutions. Wash the precipitated carbonate of lime thoroughly with sweetened water, and drain it on a muslin filter. Having placed the salt of lime, soda and potassa in a suitable porcelain dish, add about two fluid ounces of water, and one fluid ounce of hypophosphorous acid; heat the mixture gently, and add the moist proto-carbonate of iron, in small portions, from time to time, alternately with the hypophosphorous acid, until the solution is complete. Add water enough to make the whole measure ten fluid ounces; pour into a bottle containing the sugar, and dissolve by agitation. This syrup contains about five grains of the combined hypophosphites in each fluid drachm, three fourths of a grain of which is the hypophosphite of the protoxide of iron.

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The hydrocyanate of iron has lately been lauded as a remedy in epilepsy. An ounce bottle of this substance has been submitted to an analysis by Mr. Ferdinand F. Mayer, of New York, the details of which may be found in the *American Journal of Pharmacy*, 1859, September No. The result at which he arrived in the examination of a specimen bearing Tilden & Co.'s label was, that it was a mixture of pure Prussian blue with peroxide of iron and prussiate of potash. The true proto-cyanide of iron is still a chemical desideratum, and so far as the preparation in question is concerned, soluble Prussian blue might as well be used.

The oxalate and nitrate of cerium, and the sulphate and carbonate of nickel, have been introduced into practice on the recommendation of Dr. J. Y. Simpson, of Edinburgh. The writer has nothing special to offer as respects their preparation, but would submit specimens for examination.

The ammonio-ferric alum has been found, by Dr. Tyler Smith, to be a more powerful astringent than common alum, and not liable to produce the stimulating effect of other salts of iron. This has been used to some extent in Portland, but with what effect the writer has not learned.

Manganese and its preparations, especially the crystallized sulphate and the syrup of the iodide of manganese, have been used more or less during the last ten years.

Citrate of iron and strychnia has also been employed as a tonic. The difference of strychnine strength in different samples, is a source of regret, as some manufacturers employ but one per cent. of strychnine in the salt they prepare, while others double that dose. This is a source of trouble and annoyance, both to the pharmacutists and physicians, which should be obviated in the use of so potent an agent as strychnine.

Santonine, the crystallizable principle of the *artemisia santonica*, or European wormseed, has been employed with good effect against intestinal parasites. Quacks have seized upon it, and Hoi-

loway's Worm Confections are supposed to contain it. Edward Parrish, of Philadelphia, puts up Dragees de Santonine, which we may regard as reliable, and also Messrs. Fougere, of New York.

The fluid extract of *veratrum viride*, which, as prepared by Tilden & Co., of New York, professes to represent Norwood's Original Tincture, has been introduced into practice within the last seven years, and certainly possesses powers which entitle it to the attention of the profession.

We are reminded by the title of the last preparation noticed, of a large and apparently increasing class of preparations known under the title of "Fluid Extracts." The writer can do no better, in criticizing this class of preparations, than to quote from the editorial remarks of Prof. Procter, in the *American Journal of Pharmacy*: "If there is any manufacturing house in the country which owes its success to the countenance of the medical profession, it is Tilden & Co.; though to their own enterprise in bringing their preparations to the notice of physicians this recognition is mainly due; hence none should be more conscientiously careful to keep to the well-defined path of pharmaceutical rectitude in making their products. We wonder that they should be willing to run the risk incurred by engaging in so many petty items, when the regularly recognized preparations of the *Pharmacopæia* and dispensatories afford them so wide a scope. They have had, and still have, an admirable opportunity to take a firm and unflinching stand in upholding the purity and perfection of pharmaceutical products and manipulations, and on their true assumption of this position will depend their future success."

"It seems now pretty well established, that fluid extracts, as a class, meet the favorable opinion of physicians, and it becomes a matter of grave importance to the medical profession, that some efficient action be taken by the pharmacutists of the United States to adopt a set of formulæ—that is, one for each class—which shall govern the manufacturer, whether he be apothecary, druggist, or manufacturing pharmacist, as regards the proportion of the drug and the menstrua to be used in extraction, and the agent for their preservation. With these points established, it is clear, that any marked differences in these preparations could be readily detected, and their differences would be attributed to inferiority of material or unskilful manipulation."

At the meeting of the American Pharmaceutical Association, in 1859, Prof. Procter made an admirable report on the subject of fluid extracts, which covered the whole ground, leaving little if any room for improvement. All fluid extracts may be referred to one or the other of the classes into which he has divided this school of preparations, and the principles which should govern the treatment of these was succinctly yet clearly laid down, so that no apothecary need be at a loss how to go to work to prepare them. The paper was accompanied with specimens of fluid extracts made

after the Professor's formula, and better ones they were than are ever seen in the market, proving what can be done by a skilful and conscientious pharmacist in the way of manipulation.

A new invention, no less admirable in its way than some other things already named, are the patent epithems devised by Mr. Alfred Markwick, of London, and named the Piline, Spongio-Piline, and Water Dressing, to each of which the inventor adds the adjective "impermeable." These severally consist of a species of felt, differing in each, but all coated on one side with gutta-percha, the object of which is to obviate evaporation. The piline consists of a fine, white woollen felt of homogeneous texture; the spongio-piline of a mixture of sponge and wool; and the water dressing of something not so fine and even as the piline, probably wool before it is completely dressed. They all subserve an excellent purpose, as substitutes for the filthy poultices formerly and at the present time more or less in vogue—after having been used can be washed out and reapplied more than once if necessary—can be saturated with any kind of lotion, and in fact act as vehicles for epidermic medication, which supplies a want long felt by the profession.

The extract of *nux vomica* has been much used of late years as an ingredient in pills, communicating, as it does, tone and contractility to the torpid muscular fibre of the intestines; but possibly some may have met with disappointment in its use. Let one precept remain impressed on your minds whenever you order the extract of *nux vomica*; call for the *alcoholic* extract, and you will not be so likely to meet with disappointment in its use. The *aqueous* may be cheaper, but it is dear at any price, as it is almost if not quite inert and worthless.

Time fails to speak of the improvements in pharmaceutical processes, and of old standard remedies which have recently been taken up from bye places where they have been left to lie, consigned thither by the tender mercies of money-gripping manufacturers—men who have subordinated science and the public weal to lucre—old remedies, I say, taken up, and the dust of neglect wiped from them, polished by the appliances of science, until the old familiar face renews its youth, and shines again with rejuvenated lustre. A brighter day is coming for old favorites, like the *spiritus nitri dulcis*, the *spiritus etheris compositus*, and all kindred preparations. A short allusion to two or three preparations must suffice for the present.

The Pharmacopœia defines *adepts* to mean the prepared fat of *sus scrofa*, free from all saline matter. How many physicians get that so, unless they take the trouble to prepare it themselves? Impressed with the importance of this question, the writer fitted up an apparatus, and operated on some thirty pounds of lard, such as is found already rendered in provision stores. The result was rather surprising, both as to the amount of feculent matter thus

removed from the lard, and the improved texture of the fat thus treated. It is to be credited that the disrepute into which unguents of almost all kinds have fallen, is in consequence of the imperfectly prepared axunge furnished. Another improvement may be found in saturating fats, such as are employed in medicine, with some odorous body. Gum benzoin is often employed for this purpose, and the effect seems to be the prevention of the change known as rancidity.

Among the improved processes for pharmaceutical preparations, we may cite that for the cerate of cantharides. The process consists of exhausting the flies with alcohol by the displacement process, evaporating this tincture to the consistency of a soft extract, adding the wax, resin and lard, melting them together, occasionally stirring; maintain at a temperature of  $212^{\circ}$  for fifteen minutes. Strain through linen to separate the extractive and other insoluble matter that may be present, and stir until cool. This cerate should have a slight greenish-yellow hue, of rather firm consistency, and possessing in a perfect degree the active properties of the Spanish flies. The quantities used may be those directed in the U. S. Pharmacopœia. The cerate made by this process is offered as a substitute for the officinal cerate, from its elegance and greater efficacy, which has been fully attested. It is found to vesicate well, and to leave behind it none of that soreness so much resembling a burn, which is often experienced after the use of the flies in substance in the cerate. The heating of the alcoholic extract with the ingredients of the cerate affords a solution of the cantharidin in the oily matter, and at the same time a separation of the extractive.

Griffith's Myrrh Mixture is a preparation much used, yet not one apothecary in a dozen dispenses it in the shape in which it ought to be made. It is very easily done, however, with a little care and some labor, without which nothing that is worth having can be got. Let us take the quantities for a gallon, and I will set my newly arrived clerk to work upon it. First, get out your two ounces of gum myrrh. Stop! what are you going to do with that powder? You will never be able to make a decent mixture with powdered myrrh. Go to the drawer and pick out your finest and clearest lumps. You have got two ounces, have you? Ah! you have got the weight by which you sell, not that by which you compound. What is the difference? There is some eighty grains, sir; enough, in some cases, to make a matter of life or death, if it is only two thirds of a grain to the ounce. So far, so good. Now weigh out your carbonate of potassa and your sugar—six drachms and two scruples of the first and two ounces of the latter; put them into a large wedgewood mortar, and grind fine with the pestle. Now, then, we are to prepare the menstruum—as we are to make a gallon, and a gallon is equal to one hundred and twenty-eight fluid ounces, and our bottle will hold but half a gallon—how are we to

proceed? Nothing is easier—divide one hundred and twenty-eight by two, and we have sixty-four ounces. But of this sixty-four ounces, eight ounces must be allowed for the spirit of lavender, which enters into the composition of the mixture. We accordingly take fifty-six ounces, or three pints and a half of rose-water; triturate the myrrh with it, added by small quantities at a time, grinding with great perseverance, often scraping the gummy mass off the pestle, until the myrrh is reduced long before the bulk of the rose-water is added; strain it with expression through the fabric known as Nainsook cambric, and finally add the spirit of lavender. This should by no means be the compound tincture of lavender, or red lavender, as it is commonly called, but should be a few drops, say twelve, of choice otto of lavender, dissolved in eight ounces of spirit. We now have the dry ingredients for one gallon of the mixture dissolved in half the quantity of menstruum, and to dispense it we take, say four ounces of this mixture as prepared, and four ounces of rose or good common water, in which we dissolve twenty grains of crystallized sulphate of iron; mix the two solutions, and the thing is done. The advantage of this process is, that it takes but little longer to prepare the half gallon mixture than it does eight ounces, and, once made, a pint or half pint can be dispensed in five minutes, always furnishing the peculiar green coloration belonging to the proto-carbonate of iron.

One word more. The commercial confection of senna has been a source of deep disgust to the unfortunates who were required to quackle it down, but when they have been enabled to turn to the official preparation, the change has proved doubly grateful. The specimen made according to the formula of the U. S. Pharmacopœia contains forty-two grains of powdered Alexandria senna to the ounce, and operates *tuto, cito, et jucunde*.

Thus far we have taken a meagre glance at the progress of the materia medica during the ten years which have just closed. Many things have been omitted which might have added interest to the report; the aim of the writer has, however, been to say what is useful—and that attained, he is satisfied. Should the Association see fit to commit the subject to him another year, he will promise his best endeavors to act faithfully, and so far as possible to consult the interest of the Association.

All which is respectfully submitted.

Portland, June 17, 1861.

H. T. CUMMINGS, M.D.

#### LETTER FROM FORTRESS MONROE.

GEN. HOSPITAL, FORTRESS MONROE, VIRGINIA, }  
June 30th, 1861. }

MESSRS. EDITORS,—There are about one hundred and twenty-five patients at present in the General Hospital; the number is liable, of course, to sudden and considerable variation. Many of the

cases are of the acclimating diarrhœa, which troubles most new comers here, and some quite severely. Many more cases are of bronchitis, debility, diarrhœa, &c. &c., in patients convalescent after measles, and sent hither from the encampments at Newport's News and elsewhere. Besides these comparatively simple cases, there are, however, others of a more serious character, as typhoid fever, dysentery, acute rheumatism, &c. &c. A remarkable feature in the medical wards is the presence of somewhere about a dozen cases of phthisis, not incipient or doubtful, but far advanced, and most easily diagnosed; also one case of chronic nephritis. These instances are particularly of interest, as showing that great numbers of troops have been mustered into the service of the United States who would have been thrown out by a thorough and intelligent inspection. As illustrating the same fact; in one of the surgical wards I found a patient with an aggravated "ongle encarnée" on each great toe, with which he had been troubled, *more or less*, for several years; of course, a march of a few miles put him here *hors de combat*, and a burden to the country. There is also in the medical department one case of scurvy (land), two cases of disordered action of heart, the result of fatigue, and a great many other cases of debility resulting from fatigue and exposure, and requiring, for treatment, rest more than anything else. There have been also several cases of varioloid about this post, which very fortunately has not shown much disposition to spread. The state of health may be considered excellent. With the exception of the cases of phthisis, which ought never to have been enlisted, and the few instances of varioloid, which would have been avoided by proper re-vaccination, there have been very few cases of consequence. It must be acknowledged that this is a most auspicious state of things as representing the health of such a large body of troops as is stationed in this neighborhood.

Thus it will be seen, that although the medical department does not possess great interest—and it is to be hoped that it will continue thus deficient, so far as number and gravity of the cases is concerned—still it gives aid to nearly one hundred patients, who without this institution would suffer terribly in the frail and temporary hospital sheds and tents attached to the different encampments.

The medical department of the hospital need not at present detain us further, as, although in the highest degree useful, it really presents nothing of much interest. In the surgical wards are, however, many cases illustrative of military surgery. Of these I will give you some account, necessarily hasty from the pressure of extremely arduous and fatiguing duty in the performance of the methodical inspection, vaccination and re-vaccination of the troops under his command, which Maj. Gen. Butler has so honored me as to place entirely under my direction. Several of the cases of gunshot injury have been the result of accidental discharge of fire-



arms, some from sentries firing on those who omitted or refused to give the countersign; but several, also, are wounds received in the ill-starred attack on Great Bethel. Among the most important of the first cases is one of musket wound through the posterior fleshy part of the middle of the thigh. The weapon was discharged at the distance of a few feet from the patient, and in consequence of this proximity the wound is very large. At present, about two weeks since its infliction, the wound of entrance is as large as the palm of one's hand,\* that of exit about two thirds that size. Both wounds present a healthy granulating surface; the sloughs entirely separated some two or three days since, and the patient is doing well in all respects.

In another ward are two patients with wounds of the popliteal region. In one, a ball passed between the popliteal vessels, &c., and the knee-joint, injuring neither; in the other, the missile passed between the integuments and the vessels. In both, the narrowness of escape was remarkable, and both are rapidly recovering. A case of gun-shot wound of the hand is also here, in which the middle finger, with its metacarpal bone, was so shattered as to necessitate its removal on the field of battle. This case is also doing perfectly well. A case in which the ball passed in behind and below the shoulder, through both scapulæ and out at a corresponding point at the opposite side, is curious. The wound was probably received when the man was in the act of firing, with his side presented to the enemy. Another case is of similar superficial wound of the abdomen. One of the results of accident was a severe gun-shot wound of the wrist, entirely dividing the flexor tendons, with extensive sloughing. The ball grazed the bone without fracture; but, from the great loss of substance, and the irremediable division of the tendons, amputation seemed, when last I saw the patient, merely a question of time. Several patients are in hospital suffering from severe contusions from fence rails, struck by cannon balls, having come in contact with various parts of their bodies. One case threatened peritonitis, but that, with the rest, is now convalescent. But the most interesting cases are two of gun-shot fracture of thigh, one at the lower part of the upper third. In the other, the ball entered at a point between the trochanters, and passing inward, upward and backward, found its exit about the middle of the right buttock. Both these cases, contrary to the traditions of military surgery, are doing well. In the first, the wound (inflicted 20 days since) has closed at the point of exit, and that of entrance is quite free from slough, has nearly ceased to discharge, and is closed almost to the surface. In fact, the case has hitherto advanced to restoration even better than ordinary

\* The rule that the wound of exit is larger than that of entrance has, for some of its exceptions, those cases where the weapon discharged is at a very short distance from the sufferer. Beside the ball, the cartridge cover, and even part of the powder of the charge, together with portions of the dress, may enter the wound, contributing to make the entrance large, while only the ball itself may pass out, leaving the other foreign bodies in the *trajet*.



compound fractures of the thigh; and it seems probable that the ball in passing (inward and somewhat downward) through the soft parts of the back of the thigh, barely touched the bone, and produced a fracture without comminution. In the other patient, wounded at the same time, profuse purulent discharge is going on from the dependent wound (that of exit in the nates), and the almost certain extensive comminution of the bone, and probable disorganization of the hip joint, led to the apprehension of a result finally unfavorable. Still the patient appears well, has a good pulse and appetite, and were it not for occasional attacks of severe pain from spasmodic contraction of the wounded muscles, would have comparative immunity from acute suffering. Were it not for the desperate nature of the alternative, this would have seemed a proper case for early amputation at the hip; but at the time it was brought here, it seemed proper to wait the progress of the case before having recourse to so desperate an operation. An interesting instance of gun-shot injury is one where a large ball (probably "grape") entered the abdomen a little below and to the right of the point of the ensiform cartilage, and did not pass out. An examination of the wound, as far as prudent, was made without discovering the projectile, and the speedy death of the patient was anticipated as a necessary consequence of such a wound. A few days after his admission, he had fever, and jaundiced skin, urine, &c., followed by chills. These symptoms, however, gradually subsided, and he is now *apparently* improving. In another case, which terminated fatally two days after my arrival, fourteen from the receipt of the injury, and in which an autopsy was not made,\* the ball entered anteriorly below the sternum, and passed out near the spine considerably above that point, undoubtedly passing through the diaphragm, though no symptom indicated injury to the lungs or great vessels. There have been several amputations (five, I think), all of the upper extremity, one above the elbow, for compound gun-shot fracture of the latter joint; the rest for similar injuries of the hand, wrist and forearm. Other cases of traumatic injury there have been and are here, but of these a portion had either left the hospital dead or convalescent before my coming, and those which remain do not possess much interest. Of other surgical cases are several of syphilis; orchitis, resulting, not from gonorrhœa, but from blows and long marches; one case of partial rupture of the attachment of one of the heads of the gastrocnemius, from violent exertion at the battle of Bethel; and several instances of enlargement, tenderness, &c., of the inguinal glands, simulating bubo, resulting from the long, rapid and extremely exhausting march to and from that engagement. In connection with the latter cases, it is worth stating, that as a result of such marches

\* There have been no autopsies made at the hospital yet. The extreme heat of the weather, together with the custom hitherto of sending the bodies of deceased soldiers back to their native States, have been the principal reasons for this omission.

and violent and continued labor in throwing up entrenchments and stockades at Newport's News and elsewhere, many patients with incipient hernia and tendencies thereto, were placed *hors de combat*, and had to be discharged from service. Such cases, as well as those before mentioned of phthisis, &c., illustrate the importance of a full and faithful inspection of recruits for the future. Let such inspection be made carefully and laboriously by *young* men, and not, as many of them have been made, by an old one, who casts his eye over some hundreds of recruits, drawn up in line for the purpose, and in the profundity of his omniscience pronounces them fit for duty.

I have thus hastily endeavored to give an account of the "General Hospital" at Fortress Monroe, and the cases at present under treatment, but have omitted to state that the building occupied for the Institution was designed for, and till recently was occupied as a fashionable sea-side Hotel, whither the F. F. V.'s used to throng, as our people do Nahant and Newport-ward, in the torrid months of Summer. I understand that nearly eight hundred guests have been often crowded somehow into it. It contains two hundred and fifty rooms and ample capacity for five hundred patients or even more, and is in every way vastly preferable for Hospital purposes to any edifice in this neighborhood at all approaching it in size. Within the walls of the Fortress there is another Hospital, with room for from thirty to thirty-five patients. It is the old post Hospital—is now used for the sick and wounded of the "regular" army, a small body of which is stationed here, and is under the immediate charge of Dr. Cuyler, the senior "regular" surgeon and medical "Director" of this district, and two assistant surgeons of the old Medical Staff. At the time I visited it, a few days since, there were but five or six patients there, and but two of these confined to their beds—one with wound of abdomen, which proved fatal the next day, the other of disease which, as yet, had not been diagnosticated. Everything about this Hospital seemed in perfect order, neat, clean, and well ventilated, and its capacity was undoubtedly perfectly adequate to former exigencies, although now, of course, entirely insufficient.

July 9th.—The above was principally written previous to the 1st of the present month. At that time I went to Camp Butler, Newport's News, whence I have just returned. During my absence, of the cases above described—the first (flesh wound of thigh) has progressed well and looks favorable in every way—metacarpal bone, ditto. Amputation has been performed by Dr. Kimball in the case of injury of the wrist, with division and sloughing of the flexors, and the patient is getting on finely. The fractures of the thigh are continuing to do well; the worst case, particularly; the pulse continues good, and the appetite; the anterior wound, of entrance, is closed, and the discharge from the posterior wound is much diminished. It will be, of a verity, a striking case of reco-

very if it should prove one. In the case of wound (probably by grape shot), in the region of the liver, the chills and other unfavorable symptoms have become aggravated, and the prospect in every respect unfavorable—its fatal termination is only a question of days. During my absence, two cases of gun shot injury have been admitted, both the result of accident. In one it was found necessary to resect the lower half of the radius and the fore-finger and thumb with their metacarpal bones and part of the carpus. The other case is one of very extensive contusion of the soft parts of the outside of the hip without fracture; the sloughing will be enormous, and there are indications that important arterial branches, perhaps the femoral itself, may be involved in it and the patient in great danger from secondary hæmorrhage.

HENRY AUSTIN MARTIN.

#### USE OF ARSENIUS ACID IN APOPLECTIC CONGESTIONS.

BY DR. LAMARE-PICQUOT, PRINCIPAL PHYSICIAN TO THE HOSPITAL OF HONFLEUR.

[Translated from the Gazette des Hôpitaux of March 7th.]

M. LAMARE-PICQUOT thinks that the so-called *rational* treatment of apoplectic congestion, generally employed at the present day, is open to the objection of being directed rather against the symptoms than the cause of the malady. Previous to the appearance of the active symptoms of apoplectic congestion, he says, there occurs a series of circumstances and phenomena which prepare the way for it and produce it. This first cause has appeared to him to show itself always at the time that we perceive confusion of the head, vertigo, noises in the ears, &c. Under these circumstances, if the symptoms are sufficiently pronounced to have recourse to bleeding, he has noticed that in all these patients the *cruor*ic element of the blood (the globules) greatly exceeds that of the serum. He has met with some patients presenting the symptoms of apoplectic congestion in a very marked degree, whose blood afforded seventy-five parts of cruor in one hundred, and sometimes even more. Now, he adds, whenever the cruor exceeds fifty-four parts in a hundred, there are manifested some symptoms of cerebral congestion.

Bleeding at that time is a means of temporary relief, but it does not in any way permanently relieve the preponderance of the cruor over the serum. The medicine *par excellence* to bring about this important change is the solution of arsenious acid. This medicine, endowed with a remarkably debilitating power, restores gradually the equilibrium between the cruor and the serum. This fact is very easily verified, if, after the use of this remedy for thirty or forty days, we take a little blood for examination.

When the system only shows slight general symptoms of cerebral congestion, arsenious acid in the dose of a few milligrammes, taken in solution in the drink at meal times, is sufficient to arrest

it. Time is always required to bring about the desired change in the elements of the blood. A month is generally enough to obtain some results; but to restore the normal condition it is necessary to continue the use of the remedy longer.

In more grave cases we may without danger increase the dose of arsenious acid. "I have," says the author, "in my own person, carried it as high as fifteen milligrammes a day, and continued it for many months. It is a remarkable fact that the more marked and intense is the cerebral excitement, the better does the organism bear this medicine."

For some years past M. Lamare-Picquot has employed, in preference to arsenious acid, the arseniate of soda. He does not resort to bleeding except in very grave cases. "I have at this time," says he, "under treatment, the twenty-third instance of return of the primary symptoms, and if I should add the cases of recovery of patients predisposed by their constitutional condition to these dangerous symptoms, I might make up the number of forty-three or forty-four cases which have come under my care, without a single death from apoplexy."

It is necessary to add, that an important group of cases is excluded from this class; these are the apoplectic congestions of subjects very advanced in life and very feeble, as M. Lamare-Picquot is of opinion that in these the parenchymatous organs might, under the influence of the loss of blood and a very debilitating agent, pass into a condition of hyperæmia, and that this new difficulty might terminate life by a serous congestion. "Moreover," adds the author, "as man must make his exit from life by some door or other, I have never employed this treatment with old men threatened with apoplexy."—*Bulletin de Therapeutique*.

## THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, JULY 25, 1861.

REPRODUCTION OF BONE.—In the JOURNAL of the 11th inst., we published an interesting case of the reproduction of bone after excision, by Dr. E. S. Cooper, of San Francisco, the lower end of the thigh bone being completely reproduced within the period of a year. The subject is attracting considerable attention in Europe at the present time, and the French Academy has offered the very liberal prize of twenty thousand francs for the best treatise on the subject, to be awarded in the year 1866. The time is so distant and the prize is so large that we hope our own countrymen may be induced to enter into competition. We translate, from the *Gazette des Hôpitaux*, the formal announcement of the Academy.

"The French Academy proposes, for the year 1866, a grand prize on the subject of the reproduction of bones by the preservation of the periosteum.

"The Academy, wishing to indicate in a marked manner the importance which it attaches to the proposed question, has decided that the prize shall be *ten thousand francs*.

"Informed of this decision, and appreciating all the benefits likely to result from such a great advance in surgery, the Emperor immediately wrote by his Secretary to the Academy that he would double the prize. This therefore will be *twenty thousand francs*.

"Essays offered for this prize should be sent to the Secretary of the French Institute before the first of April, 1866. The authors must enclose their names, and their papers must be written in the French language."

The same number of the *Gazette des Hopitaux* contains a report by M. Maisonneuve of the entire reproduction of the right half of the lower jaw. In this case the articulating condyle was removed with the jaw. The case was one of necrosis, and the periosteum had already become thickened by the formation of a thin layer of bone on its inner surface. This was divided and turned back, and after being entirely disengaged the bone was removed to the socket; the teeth were left hanging in the gums. At the time of the report, six years and a half after the operation, it was almost impossible to determine by examination which half of the jaw had been removed. The teeth, it should be mentioned, after two or three years, came out one after the other.

A second case is next reported by Dr. Richarme, of Rive-de-Gier. In this case there was a reproduction of more than three quarters of the tibia and fibula, including both malleoli, and extending nearly to the knee. The leg had been crushed by the wheel of a railroad car, and amputation had been proposed. The patient, however, preferred to save the limb, if possible, even at the expense of additional suffering. Necrosis took place, and numerous openings formed. The dead bone was removed by fifteen operations of from half an hour to an hour each, within a period of six months. The case occurred before the use of anæsthetics was introduced, or the period would have been much shorter. The patient recovered without the slightest lameness.

THE RESULTS OF INTERMARRIAGE. — The consequences of intermarriage have been the subject of much declamation and but little sober inquiry. Evils of every kind have been depicted by some and totally denied by others. Those who denounce and those who favor within limits the practice of intermarriage are both devoid of any large series of observation, or of any perfectly conclusive chain of argument. But it must be said that the balance of facts is in favor of the former.

We read in an abstract from a communication addressed to the Medical Society of Berlin by Dr. Liebreich, some interesting remarks on the evil consequences of marriages between relations. Dr. Liebreich affirms that surdo-mutism, idiocy, and a chronic inflammation of the retina, by which the latter becomes affected with an infiltration of coloring matter which impairs vision—whence the name *pigmentary retinitis*—are in one half of the cases ascribable to marriages between close relatives. Most cretins, according to Maffei, are unable to see very small objects placed close to them; and Dr. Liebreich states that out of fifty idiots observed by him, three were suffering under pigmentary retinitis. One of these idiots belonged to a noble family, which had very seldom in the course of ages contracted alliances with other

families, and the members of which had therefore very frequently intermarried amongst each other. The afflicted person's father had married a cousin of his, by whom he had thirteen children; two of these died early, two became blind owing to pigmentary retinitis, and a fifth was both blind and afflicted with idiocy. One of his sisters married a cousin, and she had an idiot amongst her children.

Mackenzie remarks the coincidence of blindness with surdo-mutism. Dr. Liebreich confirms the fact, showing that out of the 241 deaf and dumb now in the asylum at Berlin, there are fourteen having pigmentary spots on the retina, and, out of these fourteen, eight are of Jewish descent; and it is well known that amongst the Jews marriages with relations are frequent. For the same reason surdo-mutism alone is, according to Dr. Liebreich, often met with amongst the Jews; for while at Berlin there is but one deaf and dumb Christian to 1477 of the same creed, with the Jews the proportion is one to 368. In the fourteen cases mentioned above, the consanguinity between father and mother was verified five times. In another group consisting of eighteen cases, in which retinitis alone was observed without deafness, there were eight patients whose parents were cousins-german, and five the consanguinity of whose parents remained doubtful.—*London Lancet*.

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HARVARD MEDICAL SCHOOL.—The following is a list of the gentlemen who received their medical degrees on the 17th inst., with the subjects of their dissertations.

Howard Franklin Damon, A.B. (Harvard), Boston. *Physiological and Pathological Processes.*

Thomas Haven Dearing, South Scituate. *The Country Physician. What should be his Qualifications?*

Robert Thaxter Edes, A.B. (Harv.), Dorchester. *Bright's Disease.*

Jesse Frank Frisbie, Dover, N. H. *Uterine Hæmorrhage.*

Alfred Houston Haven, Portsmouth, N. H. *The History and principal Properties of the sixty-two Chemical Elements.*

Charles Floyer Pond Hildreth, Concord, N. H. *Gravitation not the Cause of Head Presentations.*

Charles Thacher Hubbard, Taunton. *Systemic Effects of Lead.*

James Stannage Jacobs, Lunenburg, N. S. *Diphtheria.*

Robert Jamison, Halifax, N. S. *Gun-shot Wounds.*

Samuel Moore Logan, Shubenacadie, N. S. *On the Use and Abuse of Medicine.*

Edward Bromfield Mason, A.B. (Harvard), Boston. *Primary and Secondary Amputations after Gun-shot Wounds.*

Henry Augustus Richardson, A.B. (Harvard), Cambridge. *Syphilis among Sailors.*

Andrew Jackson Thompson, A.B. (Bowdoin), Brunswick, Me. *Modern means of Diagnosis.*

July 19th, 1861.

D. HUMPHREYS STORER,  
Dean of the Medical Faculty.

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CUTANEOUS RESPIRATION.—Dr. S. Kneeland, Jr., recently read a communication to the Boston Society of Natural History, on the respiration of the fishes of the blenny family and genus *pholis*, called shauny in Europe, and of which a few specimens have been taken in Boston Harbor.

"The shauny has the habit of creeping out of water by means of

the ventral fins as the tide recedes, hiding in crevices of the rocks, and there remaining until the tide again rises; they have been known to live thirty hours in a dry box. In this fish there is no air-bladder; the gill openings are very large, and would seem to permit the gills to become dry very soon, and produce death as soon as in the mackerel and other fish with large gill openings; there does not appear to be any special apparatus for separating the leaflets of the gills for admitting and retaining air, and thus delaying the period of asphyxia; there is no labyrinthine arrangement as in the climbing perch (*Anabas*), nor the small branchial openings of the eels.

"It seems most likely that the skin is the principal medium through which respiration is effected in this fish while in the air, especially as the body is soft and scaleless. We know that this cutaneous respiration is sufficient to purify the blood in some fishes, as the *Synbranchus* of Guiana, which is found buried in the earth at a considerable distance from water; and also in frogs and salamanders, both adult and young.

"Professor Agassiz observed that although the gill openings in this fish are very large, the cheeks, as in blennioids generally, are much swollen, and the gill-covers fit very closely, and, the branchial rays being soft, may serve to retain the water in the gills for a considerable time."

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DOUBLE FIG.—At the same meeting of the Boston Society of Natural History, the President, Professor Jeffries Wyman, gave an account of a monstrosity which he had recently examined,—a partially double pig.

"In this specimen there were two sets of lower extremities, the bodies partly fused, two pairs of upper extremities, a single head, two lateral ears, and a median one, and three nostrils on the snout. It presented symmetrical organs on the median line made up of organs naturally not on the median line and unsymmetrical; this may take place in any double organs, as the eyes, ears, legs, arms, lungs, kidneys, &c.; he illustrated it by a comparison with a single terminal leaf in plants, which is composed of the upper halves of two leaves. In this pig, the doubling took place also in the brain. On separating the two sides of the cerebral hemispheres, which were made up of the right hemisphere of one brain and the left hemisphere of another, was seen a third hemisphere, with a single optic thalamus and striated body, and below these organs double; to each of the lateral hemispheres was appended a distinct cerebellum and spinal marrow. It is a question of considerable physiological interest, whether here there was a single or two organisms. C. F. Wolff maintains that there may be two primitive stripes on one germinal membrane, or one bifurcating at the top or at the bottom, thus making double monsters single organisms.

"Prof. Agassiz said that he thought that the study of corals would show that the general idea of individuality is not correct. *Astræa* grows by single tubes, growing in length but not enlarging in diameter, and the buds arise from the interstices between the tubes by the vital power of individuals; in other corals the buds grow from the sides, and may form independent and disconnected individuals; in others the tubes become wider with the increase of length, and finally form two tubes, with two mouths and two stomachs, and yet the two branches have proceeded from a single organism; two individuals have been developed from one base."—*Proceedings Bos. Soc. Nat. Hist.*



**THE LATE CENSUS OF ENGLAND.**—The returns for England and Wales have just been issued. The gross population, exclusive of the army, navy, and merchant seamen abroad, amounts to 20,205,504: including the army and navy, it amounts to 20,223,746, against 18,054,170 in 1851. The number of inhabited houses is 3,745,463 against 3,278,039 in 1851. The chief increase is in Middlesex (319,195), Lancaster (397,508), Surrey (147,603), Stafford (137,868), and Kent (117,909). There is a decrease in the counties of Cambridge, Norfolk, Rutland, Suffolk, Wilts, Anglesey and Montgomery. In the metropolis there is a decrease in the parishes, the largest (10,382) being in the City. The largest metropolitan increase is in St. Pancras (198,882), Kensington (186,463), Marylebone (161,609), and Islington (155,291). The entire population of London, with the Local Government Act, is 2,803,034, against 2,362,236 in 1851.—*London Lancet*.

**LEUCOCYTHÆMIA.**—At the meeting of the *Société de Médecine Pratique* in January last, M. Bouchut read, in the name of M. Corlieu, an interesting case of leucocythæmia, in the course of which he made some remarks upon the case. He agreed entirely with M. Corlieu in his views of the nature of leucocythæmia. In a service of children where cachexia is abundant, there are very frequent opportunities of studying the number of white globules in the blood. It is, he said, what I have very often been able to do by means of a puncture. I have come to the conclusion that besides hypertrophy of the spleen, of the liver and lymphatic ganglia, leucocythæmia is found in patients who have been a long time suffering. More than that, I have been able to detect frequently in persons affected with diarrhœa, a large number of white globules, and the next day the disproportion did not exist. To sum up, then, leucocythæmia is a secondary affection, a complication, an alteration of nutrition.—*Gaz. des Hôpitaux*, March 16th.

Dr. Alonzo Garcelon, Hospital Surgeon, Dr. H. H. Hill of Augusta, Drs. Wm. Wood and J. T. Gilman of Portland, and Dr. J. C. Bradbury of Oldtown, constitute the Medical Board of the State of Maine, to examine candidates for appointments as Surgeons and Assistant Surgeons of the Regiments of that State.

#### VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, July 20th, 1861.

##### DEATHS.

	Males.	Females.	Total.
Deaths during the week, . . . . .	47	28	75.
Average Mortality of the corresponding weeks of the ten years, 1851-1861,	42.4	39.0	81.4
Average corrected to increased population, . . . . .	..	..	90.85
Deaths of persons above 30, . . . . .	..	..	..

##### Mortality from Prevailing Diseases.

Phthisis.	Chol. Inf.	Croup.	Scar. Fev.	Pneumonia.	Variola.	Dysentery.	Typ. Fev.	Diphtheria.
12	14	0	4	2	0	1	0	0

##### METEOROLOGY.

From Observations taken at the Observatory of Harvard College.

Mean height of Barometer, . . . . .	29.986	Highest point of Thermometer, . . . . .	85.0
Highest point of Barometer, . . . . .	30.176	Lowest point of Thermometer, . . . . .	56.0
Lowest point of Barometer, . . . . .	29.702	General direction of Wind, . . . . .	W. S. W.
Mean Temperature, . . . . .	70.3	Am't of Rain (in inches) . . . . .	1.56

**DEATHS IN BOSTON** for the week ending Saturday noon, July 20th, 75. Males, 47—Females, 28.—Atheros (of hip), 1—accidents, 7—inflammation of the bowels, 1—congestion of the brain, 1—disease of the brain, 2—inflammation of the brain 1—bronchitis, 2—cancer, 1—ch. dera. infantum, 14—consumption, 12—convulsions, 2—diabetes mellitus, 1—dyspepsy, 3—dropsy of the brain, 1—dysentery, 1—scarlet fever, 4—yellow fever, 1—infantile diseases, 1—disease of the liver, 2—congestion of the lungs, 1—inflammation of the lungs, 2—malt emation, 1—marasmus, 4—paralysis, 1—peritonitis, 1—pleurisy, 2—scrophula, 1—teething, 1—sore throat, 1—unknown, 2.

Under 5 years of age, 39—between 5 and 20 years, 7—between 20 and 40 years, 13—between 40 and 60 years, 10—above 60 years, 6. Born in the United States, 53—Ireland, 15—other places, 5.